

ABSTRACT

A storage/buffering system for the stocking and/or buffering of substrate and/or substrate carriers in a process environment includes a 6-axis robot. An end-effector is connected with the robot
5 providing an additional one degree of freedom and a mechanism for grabbing and moving of substrate and/or substrate carriers. The robot is mounted in an inverted orientation to a removable service cart for easy removal of the robot to a service area in the event of breakdown. The robot receives commands from a programmable controller connected to control the robot and configured to direct the arm of the robot through a set of movements. Product is loaded in and out of the
10 system through I/O load ports. Product is stored inside the storage/buffering system on a plurality of storage locations, each with product presence/absence detect sensor. The robot can alternatively be mounted directly to the storage system enclosure structure.